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CENTRAL INTELLIGENCE AGENCY 25X1 REPORT [redacted]

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SUBJECT 1. Organization of the Development Branch of the Tesla Electric Corporation
2. Activities of the Vacuum Section of the Development Branch

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1. Organization of the Development Branch of the Tesla Electric Corporation

25X1 a. The headquarters of the Development Branch ("Vyvoj") are located in the former Mikrofona plant in Prague-Strasnice. The chief of the Branch is Havelka (fnu); his deputy is Major (fnu) [redacted] 25X1 [redacted]

25X1 b. The Development Branch of the Tesla Corporation is divided into the following sections:*

1) Vacuum Section: Called Tube Development Group in SIR 19/4

Located at Poděbradska 54, Prague-Vysočany. Telephone number 81900.
Manager: Jan Váňa. Deputy: Karel Šlais.

2) (Radar Technology Section:

Established in the former Mikrofina works at Pardubice. One of the leading researchers is Engineer Kapoun.)

3) Electronic Tube Subsection ("odbor"):

Scheduled for transfer to Rožnovy pod Radhoštem, Moravia, at the beginning of 1950. Currently located in the following plants: former Philips plant at Prague-Hlubětin; former Osram plant at Prague-Holešovice; former Lorenz or Telefunken plant at Vrchlabí.

4) (Instruments Subsection:

✓ Branches at Prague-Strašnice, Prague-Hlubětin, Pardubice, Kolin, Bratislava (former Tungsram plant), and at other small factories.)

5) (Telephone Subsection:

✓ Branches at Prague-Karlin and possibly elsewhere.)

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2. Activities of the Vacuum Section of the Development Branch

a. The Vacuum Section of the Development Branch of the Tesla Corporation employs some 90 persons and consists of the following subsections:

1) Receiver Tubes:

Chief research engineer ("vývojar"): Hix

25X1 Associate research engineer: Karel Slais [redacted]

2) Special Tubes:

Deals with magnetrons, klystrons, and "obrazovky" (cathode-ray tubes).

Chief research engineer: Bretislav Randak.
Glass expert: Jozef Boleslav.
Researcher ("stinitkar"): Honza Milos.

3) Planning:

Chief: Miroslav Vlk.

4) Vacuum Technology:

Chief: Dr. Espe, a well-known German engineer.

5) Chemical Technology:

25X1 The former chief, Janik [redacted] the new chief has not yet been established.

6) Blueprints:

25X1 Chief, Janda [redacted]

7) Economic Subsection:

25X1 Chief: Zdenek Kara [redacted]

8) Calcuations:

Connected with the Planning and Economic Subsections.

9) Personnel and Finance:

Chief: Mme. Boleslavova, wife of the glass expert, para. 2a-2).

10) Administrative:

25X1 Chief: Svatopluk Pajerek [redacted]

b. The Vacuum Section of the Development Branch works on projects assigned to it by the Ministry of Defense, the Ministry of Posts and Telegraph, the Czech Radio System, various national corporations, and by other divisions of the Tesla combine itself. Whenever an order is placed, an attempt is made to provide the Section with a prototype of the vacuum tube required, plus necessary construction data and patent abstracts. If these are not provided, the Section attempts to obtain the necessary models and details itself.

c. If a tube which has been selected for production has already been tested, the Section disassembles it and assays and measures its various component parts, and the Construction Section uses the resulting data in the drawing of plans

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and blueprints. Parts composed of various materials are chemically analyzed by the various traditional methods, including spectral analysis. Finally, using this data, one of the construction departments makes a laboratory copy. It occasionally develops that some modifications of the prototype's qualities are necessary. Upon completion, the laboratory copy is subjected to tests and measurements. If the product is satisfactory, the agency placing the order may request the initial production of a "zero series" of tubes to allow for further testing and to allow for a study of assembly line problems which may arise from the manufacture of the particular tube.

d. The Vacuum Section recently successfully completed the development of a tube designated 6F25. This is a high frequency pentode of great transconductance, a modification of the German AF 100 tube. A "zero series" of 8,000 units is being manufactured for the USSR. Production has not, however, been entirely successful since the automatic drawing machines are of an obsolete design and because no good quality cathodes have as yet been produced. Of 1,000 units, only approximately 260 were good.

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e. The Vacuum Section has succeeded in developing a miniature duodiode, and a "zero series" of 8,000 units is being manufactured for the USSR.

f. Work on the EY 3000, LV 301, RL4, 4T1, 1T4, and DL15 is nearing completion. EY 3000 is a rectifier which is made to glow indirectly. LV 301 is an output pentode of great transconductance. RL4 and 4T1 are German tubes used on ultra-short wave field sets. Tube 1T4 conforms to the standard American 1R5, 1S4, and 1T4 series. DL15 is a battery output pentode. ?

g. Researchers in Dr. Espe's modern vacuum tube technology laboratory study the materials used in the construction of these tubes in an effort to find cheaper or indigenous materials which may be used as substitutes. Various types of glass are also subjected to close investigation and studies are made to facilitate production by the Czech glass industry of precision glassware with special thermal and mechanical characteristics. Experimental glass is supplied by the Kostany works in Bohemia. ?

h. The Chemical Technology Subsection of the Vacuum Section has been engaged in developing a new method of quantitative spectral analysis. The project was scheduled for completion by the spring of 1950. [redacted]

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i. The above subsection is also working on problems connected with cathode emission materials and insulating materials for heaters. The cathode material consists of a suspension of a certain acid ("kysl. barnaty") and other substances in acetone. This material is applied in a very thin layer to the carrier cathode tube and forms the cathode. The insulating material for heaters ("kyslicnik hlinity") is currently [redacted] [redacted] imported [redacted] Efforts are being made to produce this material indigenously for military reasons and to avoid the drain on foreign exchange.

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j. Most of the materials employed in the construction of vacuum tubes are obtained from foreign firms [redacted]

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k. Preliminary research on the development of two or three types of magnetrons, ordinary klystrons, and tunable photocells (sic) is being conducted under the direction of Stratonov (fnu). The first results will become known toward the end of 1949. The tubes will be principally employed by the motion picture industry and in sound equipment and are actually copies of Philips and ASA models.

l. Work on the magnetrons and klystrons is at present at the theoretical stage. Positive results have been achieved only in the production of cathode-ray tubes ("obrazovky"), of which three types have been evolved, one bearing the designation LB13. This is a copy of a German product which was employed in measuring instruments and in radar. The diameter of the screen is 13 centimeters. Another tube has a diameter of 30 cm. and is also intended for measuring instruments and for radar. The third has a screen diameter of 30 cm. and is intended for television use. The so-called "phosphors" employed in these tubes are imported [redacted] since the domestic industry is unable to supply them.

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25X1 [redacted] Comment: This partial breakdown of the organization of the Development Branch differs radically from the breakdown previously presented [redacted]

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